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slenderly acuminate and inodorous leaves (those of *bignonioides* have a disagreeable, almost fetid odor when touched), marked with similar glands in the axils of the principal veins of the under side; by its much less crowded panicle and by its much larger flower, fruit and seed The flowers I found 2 inches in the vertical and a little more in the transverse diameter; in the other they have 1⅔ inches in each diameter; the lower lobe is deeply notched or bilobed in *speciosa*, entire in *bignonioides;* the tube in the former is conical and 10 lines, in the latter campanulate and about 7 lines long, in the first slightly oblique, in the other very much so, the upper part being a great deal shorter than the lower one, so that the anthers and stigma * become uncovered; the markings in the flower of the old species are much more crowded and conspicuous, so as to give the whole flower a dingy appearance, while ours looks almost white. The upper lip of the corolla before expansion extends beyond the other lobes and covers them like a hood in the Western species, while in the Eastern it is much shorter than the others and covers them only very partially. The pods of our species are 8–20 inches long, 17–20 lines in circumference, dark brown and strongly grooved, when dry, the placental dissepiment very thick; in the Eastern species the pod is nearly the same length, but only 9–12 lines in circumference, its grooves very slight, its color pale and dissepiment flat. In both species the pod is perfectly terete before the valves separate, after that the valves of ours remain more or less semiterete, while the much thinner ones of the other flatten out, so that they *seem* to indicate a compressed pod. The elongated seeds winged at both ends, are of about equal length in both species, but in *speciosa* they are much wider (3½–4 times) and the wings have more or less rounded ends which terminate in a broad band of rather short hair; in *bignonioides* the seeds are only 2½–3 lines wide, with pointed wings and their tips terminating in a long, pencil-shaped tuft of hair.

Our tree is larger, of straighter growth and being a native of a more Northern latitude is hardier than the Southeastern species; the wood of both is extremely durable, perhaps as much so as that of our red cedar, and has the advantage over it of a much more rapid growth and of possessing only a very thin layer (2 or 3 annual rings) of destructible sap wood. But of these qualities and of its adaptability to many important uses others, and especially Mr. Barney in a recent pamphlet, have given a full account It is already extensively planted in our Western prairie States and especially along railroads, for which it is expected to furnish the much needed timber in a comparatively short time.—G. ENGELMANN, *St. Louis, January 1, 1880.*

TENNESSEE PLANTS.—Along with specimens we receive from time to time valuable notes from our esteemed correspondent, Dr. Gottin-

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*I may here remark that *Catalpa*, probably like all its allies, is proterandrous, the anthers open in the morning and the lobes of the stigma separates and become glutinous toward evening, the upper lobe remaining erect, the lower turning down close upon the style. I have not ascertained how they are impregnated as at that time the anthers are effete, and by the following morning the lobes of the stigma are again closed.

ger, of Nashville, Tenn. A few of them may here be put on record. *Forestiera ligustrina* does not (like *F. acuminata*) blossom in early spring from axils of the preceding year. On the cedar barrens near Nashville, where it abounds, the fragrant flowers develop about the middle of August from the axils of the leaves of that year; and the fruit ripens at the end of September. That of *F. acuminata*, which blossoms very early, is ripe before the end of May. *Tragia macrocarpa.*—Both surfaces of the leaves bear stinging hairs. *Phlox Stellaria.*—This neat and rare species is found at Lavergne, seventeen miles from Nashville. in cedar barrens, growing in beds of sphagnum and other mosses, in moist places. *Thermopsis Caroliniana*, a most rare species, has been found by Dr. Gottinger on the Harpeth hills, near Nashville.—A. GRAY.

LITTORELLA AND SCHIZÆA IN NOVA SCOTIA.—It is singular how a long-overlooked plant, once detected, is then promptly found again and again. Following upon Mr Pringle's announcement of the second discovery of *Littorella lacustris* (at the northern end of Lake Champlain), I have now to announce that Miss Elizabeth G. Knight, of the New York Normal College, found it in August last, growing abundantly between the stones on the shores of Grand Lake, Nova Scotia, twenty-three miles from Halifax.

Botanists will be equally interested to know that she also detected, among the rhizomes of *Osmunda regalis*, near the lake shore, the rare *Schizœa pusilla.* La Pylaie's specimens in his herbarium at Paris, collected in Newfoundland about sixty years ago (which I have seen), had accredited this plant to New Foundland; but I believe no one has since found it out of New Jersey until this happy discovery by Miss Knight in an adjacent portion of British America. A. GRAY.

THE COEFFICIENT OF CONTRACTION.—My attention was lately drawn to a remarkable case of the difference in length produced by unequal "seasoning," in the two sides of an oak post. The post referred to is about four inches square; one end is sunk in the ground and the other projects ten and one half feet above the surface. When placed in position some time ago it was straight and perpendicular; at the present time it leans toward the south, deviating a little over a foot from the perpendicular. The post was "set with the compass," and it is interesting to note that a north and south line lies in the plane of the curve.

Experiments have given us the coefficients of expansion in different metals. Why may we not have experiments to determine the coefficients of contraction in different woods, i. e., to determine the fractional decrease in length produced in rods of "green" wood, say 1 meter long and 2 cm. square, by the application of a steady and absolutey dry heat for a given length of time? The knowledge would be of no practical importance perhaps, but it might bring out unsuspected correlation between looseness of tissue and amount of contraction.—C. R. BARNES, *LaFayette, Ind.*